OMB Approval Number: 2050-0095
Approved for Use Through: 4/95

PA-Score

PA Scoresheets

Site Name: ARVIN INDUSTRIES
CERCLIS ID No.: IND062812870
Street Address: 4430 AIRPORT EXPRESSWAY
City/State/Zip: INDIANAPOLIS, IN 47201

Investigator: MARK JAWORSKI
Agency/Organization: IDEM
Street Address: 105 SOUTH MERIDIAN
City/State: INDIANAPOLIS, IN

Date: 3-15-93

WASTE CHARACTERISTICS

Waste Characteristics (WC) Calculations:

1 LEAKING UST	Non-drum containers	Ref: 1	WQ value	maximum
Volume	1.85E+04 gals		3.70E+01	3.70E+01

ACCORDING TO THE SUBSURFACE INVESTIGATION REPORT BY ATEC ENVIRONMENTAL, TWO USTs REMOVED FROM THE SITE. ONE LUST HELD 18000 GALS. AND THE OTHER UST HELD 500 GALLONS.

Ref: 1

** Only First WC Page Is Printed ** | Waste Characteristics Score: WC = 18

Ground Water Pathway Criteria List
Suspected Release

Are sources poorly contained? (y/n/u)	Y
Is the source a type likely to contribute to ground water contamination (e.g., wet lagoon)? (y/n/u)	Y
Is waste quantity particularly large? (y/n/u)	U
Is precipitation heavy? (y/n/u)	N
Is the infiltration rate high? (y/n/u)	U
Is the site located in an area of karst terrain? (y/n)	N
Is the subsurface highly permeable or conductive? (y/n/u)	Y
Is drinking water drawn from a shallow aquifer? (y/n/u)	Y
Are suspected contaminants highly mobile in ground water? (y/n/u)	Y
Does analytical or circumstantial evidence suggest ground water contamination? (y/n/u)	Y
Other criteria? (y/n)	N
SUSPECTED RELEASE? (y/n)	Y

Summarize the rationale for Suspected Release:

IN APRIL 1986, ONE 18,000 GALLON UST AND ONE 500 GALLON UST WERE REPORTEDLY REMOVED UNDER SUPERVISION OF ARVIN INDUSTRIES PERSONNEL. A SUBSURFACE INVESTIGATION AND SAMPLING RESULT REPORT INDICATED 1.5 PPM 1,1,1-TRICHLOROETHANE WITHIN THE WATER OF AN INSTALLED MONITORING WELL (MW 2).

Ref: 1

Ground Water Pathway Criteria List
Primary Targets

Is any drinking water well nearby? (y/n/u)	Y
Has any nearby drinking water well been closed? (y/n/u)	N
Has any nearby drinking water well user reported foul-testing or foul-smelling water? (y/n/u)	N
Does any nearby well have a large drawdown/high production rate? (y/n/u)	Y
Is any drinking water well located between the site and other wells that are suspected to be exposed to a hazardous substance? (y/n/u)	U
Does analytical or circumstantial evidence suggest contamination at a drinking water well? (y/n/u)	U
Does any drinking water well warrant sampling? (y/n/u)	Y

Other criteria? (y/n) N

PRIMARY TARGET(S) IDENTIFIED? (y/n) Y

Summarize the rationale for Primary Targets:

DREXEL GARDENS AND MARS HILL RESIDENTIAL AREAS ARE LOCATED EACH APPROXIMATELY 1OOO FEET FROM THE ARVIN INDUSTRIES SITE. THE RESIDENTIAL AREAS OBTAIN DRINKING WATER AT A DEPTH OF AROUND 41 FEET. THE VOC CONTAMINATION DETECTED AT THE ARVIN SITE OCCURS AT 15 FEET. AT LEAST 15 FEET OF SANDY CLAY EXIST BETWEEN THE UPPER CONTAMINATED AQUIFER AND THE LOWER DRINKING WATER AQUIFER.

Ref: 3

GROUND WATER PATHWAY SCORESHEETS

Pathway Characteristics

		Ref.
Do you suspect a release? (y/n)	Yes	
Is the site located in karst terrain? (y/n)	No	2
Depth to aquifer (feet):	12	1
Distance to the nearest drinking water well (feet):	1000	3

LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References
1. SUSPECTED RELEASE	550		
2. NO SUSPECTED RELEASE		0	
LR =	550	0	

Targets

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION 5 person(s)	50		
4. SECONDARY TARGET POPULATION Are any wells part of a blended system? (y/n) N	167	0	
5. NEAREST WELL	50	0	
6. WELLHEAD PROTECTION AREA None within 4 Miles	0	0	
7. RESOURCES	5	0	
T =	272	0	

WASTE CHARACTERISTICS

WC =	32	0

GROUND WATER PATHWAY SCORE:	58

Ground Water Target Populations

Primary Target Population Drinking Water Well ID	Dist. (miles)	Population Served	Reference	Value
1 MARS HILL RES. WELL	0.18	2	3,4	20
2 DREXEL GDNS. RES. WELL	0.18	3	3,4	30

*** Note : Maximum of 5 Wells Are Printed *** Total 50

Secondary Target Population Distance Categories	Population Served	Reference	Value
0 to 1/4 mile	0	3,5,6	0
Greater than 1/4 to 1/2 mile	180	3,5,6	10
Greater than 1/2 to 1 mile	665	3,5,6	17
Greater than 1 to 2 miles	726	3,5,6	9
Greater than 2 to 3 miles	0	3,5,6	0
Greater than 3 to 4 miles	13092	3,5,6	131
		Total	167

Apportionment Documentation for a Blended System

IT APPEARS THAT ALL WELLS WITHIN 3 MILES OF THE SITE OBTAIN DRINKING WATER FROM EITHER A PRIVATE WELL OR FROM THE INDIANAPOLIS WATER COMPANY WELLS LOCATED OUTSIDE THE FOUR (4) MILE RADIUS OF THE SITE. THE WELLS LOCATED BETWEEN THE 3-4 MILE RADIUS DISTANCE RINGS ARE THE SPEEDWAY MUNICIPAL WELLS. THE SPEEDWAY WELLS ARE LOCATED IN THE SAME AREA AND SUPPLY WATER TO RESIDENTS OUTSIDE THE 4-MILE RADIUS.

Ref: 3,8

Surface Water Pathway Criteria List Suspected Release	
Is surface water nearby? (y/n/u)	N
Is waste quantity particularly large? (y/n/u)	U
Is the drainage area large? (y/n/u)	N
Is rainfall heavy? (y/n/u)	N
Is the infiltration rate low? (y/n/u)	N
Are sources poorly contained or prone to runoff or flooding? (y/n/u)	U
Is a runoff route well defined(e.g.ditch/channel to surf.water)? (y/n/u)	N
Is vegetation stressed along the probable runoff path? (y/n/u)	N
Are sediments or water unnaturally discolored? (y/n/u)	N
Is wildlife unnaturally absent? (y/n/u)	U
Has deposition of waste into surface water been observed? (y/n/u)	N
Is ground water discharge to surface water likely? (y/n/u)	U
Does analytical/circumstantial evidence suggest S.W. contam? (y/n/u)	N
Other criteria? (y/n) N	
SUSPECTED RELEASE? (y/n)	N

Summarize the rationale for Suspected Release:

THE NEAREST SURFACE WATER BODY IS THE WHITE RIVER. THE PPE INTO THE WHITE RIVER IS LOCATED ABOUT 3 MILES SOUTH OF THE ARVIN INDUSTRIES SITE. DUE TO THE HIGH PERMEABILITY OF THE SURROUNDING SURFACE AND SUBSURFACE SOILS, IT APPEARS UNLIKELY FOR ANY LIQUID CONTAMINANT (VOA) TO DISCHARGE INTO THE WHITE RIVER. THE VOA WOULD SOAK INTO THE SOILS BEFORE ENTERING INTO THE WHITE RIVER.

Ref: 9

Surface Water Pathway Criteria List
Primary Targets

Is any target nearby? (y/n/u) If yes: Y
N Drinking water intake
Y Fishery
Y Sensitive environment

Has any intake, fishery, or recreational area been closed? (y/n/u) N

Does analytical or circumstantial evidence suggest surface water contamination at or downstream of a target? (y/n/u) N

Does any target warrant sampling? (y/n/u) If yes: N
N Drinking water intake
N Fishery
N Sensitive environment

Other criteria? (y/n) N

PRIMARY INTAKE(S) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Intakes:

THERE ARE NO SURFACE WATER INTAKES IN THE TARGET DISTANCE USED AS A SOURCE FOR DRINKING.

Ref: 10
continued -------

continued -------

Other criteria? (y/n) N

PRIMARY FISHERY(IES) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Fisheries:

THE PPE IS LOCATED APPROXIMATELY 2 MILES SOUTH OF THE ARVIN INDUSTRIES SITE. IT APPEARS UNLIKELY FOR CONTAMINANTS FROM THE SITE ENTER THE PPE. DUE TO THE HIGH PERMEABILITY OF THE SURFACE SOILS, THE CONTAMINANTS FROM THE SITE WOULD SOAK INTO THE SOILS BEFORE ENTERING INT THE SURFACE WATER BODY (STATE DITCH).

Ref: 9,11

Other criteria? (y/n) N

PRIMARY SENSITIVE ENVIRONMENT(S) IDENTIFIED? (y/n) N

Summarize the rationale for Primary Sensitive Environments:

IT APPEARS UNLIKELY FOR ANY CONTAMINANT FROM THE ARVIN INDUSTRY SITE TO ENTER ANY SENSITIVE ENVIRONMENT. THE SURFACE SOILS ARE VERY PERMEABLE SURROUNDING THE ARVIN SITE. ANY CONTAMINANT THAT WOULD BE SPILLED ONTO THE ARVIN SITE WOULD SOAK INTO THE SURROUNDING SOILS BEFORE ENTERING THE SURFACE WATER BODY.

Ref: 9,

SURFACE WATER PATHWAY SCORESHEETS

Pathway Characteristics		Ref.
Do you suspect a release? (y/n)	No	
Distance to surface water (feet):	0	
Flood frequency (years):	1-10	
What is the downstream distance (miles) to: a. the nearest drinking water intake? b. the nearest fishery? c. the nearest sensitive environment?	 0.0 0.0 0.0	

LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References
1. SUSPECTED RELEASE	0		
2. NO SUSPECTED RELEASE		500	
LR =	0	500	

Drinking Water Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
3. Determine the water body type, flow (if applicable), and number of people served by each drinking water intake.			
4. PRIMARY TARGET POPULATION 0 person(s)	0		
5. SECONDARY TARGET POPULATION Are any intakes part of a blended system? (y/n): N	0	0	
6. NEAREST INTAKE	0	20	
7. RESOURCES	0	5	
T =	0	25	

Drinking Water Threat Target Populations

Intake Name	Primary (y/n)	Water Body Type/Flow	Population Served	Ref.	Value
1 NONE	N		0	10	0

Total Primary Target Population Value	0
Total Secondary Target Population Value	0

*** Note : Maximum of 6 Intakes Are Printed ***

Apportionment Documentation for a Blended System

THERE ARE NO SURFACE WATER INTAKE USED AS A SOURCE FOR DRINKING WATER WITHIN THE TARGET DISTANCE.

Ref: 3

Human Food Chain Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
8. Determine the water body type and flow for each fishery within the target limit.			
9. PRIMARY FISHERIES	0		
10. SECONDARY FISHERIES	0	30	
T =	0	30	

Human Food Chain Threat Targets

Fishery Name	Primary (y/n)	Water Body Type/Flow	Ref.	Value
1 STATE DITCH	N	10-100 cfs	11,12	30
2 WHITE RIVER	N	>100-1000 cfs	11,12	12

Total Primary Fisheries Value	0
Total Secondary Fisheries Value	0

*** Note : Maximum of 6 Fisheries Are Printed ***

Environmental Threat Targets

TARGETS	Suspected Release	No Suspected Release	References
11. Determine the water body type and flow (if applicable) for each sensitive environment.			
12. PRIMARY SENSITIVE ENVIRONMENTS	0		
13. SECONDARY SENSITIVE ENVIRONS.	0	52	
T =	0	52	

Environmental Threat Targets

Sensitive Environment Name	Primary (y/n)	Water Body Type/Flow	Ref.	Value
1 CLONOPHIS KIRTLANDI	N	10-100 cfs	13	8
2 FLOODPLAIN FOREST	N	<10 cfs	13	25
3 EPIOBLASMA TORULOSA RANGI	N	10-100 cfs	13	8
4 PLEUROBEMA CLAVA	N	10-100 cfs	13	8
5 QUADRULA CYLINDRICA	N	10-100 cfs	13	5

Total Primary Sensitive Environments Value 0
Total Secondary Sensitive Environments Value 0
*** Note: Maximum of 6 Sensitive Environments Are Printed ***

Surface Water Pathway Threat Scores

Threat	Likelihood of Release(LR) Score	Targets(T) Score	Pathway Waste Characteristics (WC) Score	Threat Score LR x T x WC / 82,500
Drinking Water	500	25	18	3
Human Food Chain	500	30	18	3
Environmental	500	52	18	6

SURFACE WATER PATHWAY SCORE: 12

Soil Exposure Pathway Criteria List
Resident Population

Is any residence, school, or daycare facility on or within 200 feet of an area of suspected contamination? (y/n/u)	N
Is any residence, school, or daycare facility located on adjacent land previously owned or leased by the site owner/operator? (y/n/u)	N
Is there a migration route that might spread hazardous substances near residences, schools, or daycare facilities? (y/n/u)	N
Have onsite or adjacent residents or students reported adverse health effects, exclusive of apparent drinking water or air contamination problems? (y/n/u)	N
Does any neighboring property warrant sampling? (y/n/u)	N

Other criteria? (y/n) N

RESIDENT POPULATION IDENTIFIED? (y/n) N

Summarize the rationale for Resident Population:

THE SITE IS LOCATED IN AN INDUSTRIAL PARK AREA. THE SITE DOES NOT LIE WITHIN 200 FEET OF A RESIDENCE OR DAY CARE FACILITY. ANY CONTAMINANT THAT WOULD SPILL ONTO THE SURFACE SOILS WOULD SOAK INTO THE PERMEABLE SURFACE SOILS. THERE DOES NOT APPEAR TO BE A MIGRATIONAL ROUTE TO THE NEARBY RESIDENTIAL AREAS.

Ref: 9,14

SOIL EXPOSURE PATHWAY SCORESHEETS

Pathway Characteristics		Ref.
Do any people live on or within 200 ft of areas of suspected contamination? (y/n)	No	11,14
Do any people attend school or daycare on or within 200 ft of areas of suspected contamination? (y/n)	No	11,14
Is the facility active? (y/n):	Yes	11,14

LIKELIHOOD OF EXPOSURE	Suspected Contamination	References
1. SUSPECTED CONTAMINATION LE =	550	

Targets

2. RESIDENT POPULATION 0 resident(s) 0 school/daycare student(s)	0	
3. RESIDENT INDIVIDUAL	0	
4. WORKERS 1 - 100	5	
5. TERRES. SENSITIVE ENVIRONMENTS	50	
6. RESOURCES	5	
T =	60	

WASTE CHARACTERISTICS

WC = 18

RESIDENT POPULATION THREAT SCORE: 7

NEARBY POPULATION THREAT SCORE: 1

Population Within 1 Mile: 1 - 10,000

SOIL EXPOSURE PATHWAY SCORE: 8

Soil Exposure Pathway Terrestrial Sensitive Environments

Terrestrial Sensitive Environment Name	Reference	Value
1 BARTRAMINA BUGICANDA	13	50
Total Terrestrial Sensitive Environments Value		50

*** Note : Maximum of 7 Sensitive Environments Are Printed ***

Air Pathway Criteria List
Suspected Release

Are odors currently reported? (y/n/u)	N
Has release of a hazardous substance to the air been directly observed? (y/n/u)	N
Are there reports of adverse health effects (e.g., headaches, nausea, dizziness) potentially resulting from migration of hazardous substances through the air? (y/n/u)	U
Does analytical/circumstantial evidence suggest release to air? (y/n/u)	N

Other criteria? (y/n) N

SUSPECTED RELEASE? (y/n) N

Summarize the rationale for Suspected Release:

NO ODORS HAVE BEEN REPORTED. NO RELEASE OF HAZARDOUS SUBSTANCES TO THE AIR ARE KNOWN TO HAVE BEEN REPORTED. THERE NO KNOWN REPORTS OF ADVERSE HEALTH EFFECTS RESULTING FROM MIGRATION OF HAZARDOUS SUBSTANCES THROUGH THE AIR.

Ref: 14,15

AIR PATHWAY SCORESHEETS

Pathway Characteristics

		Ref.
Do you suspect a release? (y/n)	No	
Distance to the nearest individual (feet):	0	

LIKELIHOOD OF RELEASE	Suspected Release	No Suspected Release	References
1. SUSPECTED RELEASE	0		
2. NO SUSPECTED RELEASE		500	
LR =	0	500	

Targets

TARGETS	Suspected Release	No Suspected Release	References
3. PRIMARY TARGET POPULATION 0 person(s)	0		
4. SECONDARY TARGET POPULATION	0	56	
5. NEAREST INDIVIDUAL	0	20	
6. PRIMARY SENSITIVE ENVIRONS.	0		
7. SECONDARY SENSITIVE ENVIRONS.	0	1	
8. RESOURCES	0	5	
T =	0	82	

WASTE CHARACTERISTICS

WC =	0	18

AIR PATHWAY SCORE:	9

Air Pathway Secondary Target Populations

Distance Categories	Population	References	Value
Onsite	35	15	5
Greater than 0 to 1/4 mile	74	5,16	1
Greater than 1/4 to 1/2 mile	343	5,16	3
Greater than 1/2 to 1 mile	858	5,16	1
Greater than 1 to 2 miles	39141	5,16	27
Greater than 2 to 3 miles	39141	5,16	12
Greater than 3 to 4 miles	78283	5,16	7
	Total Secondary Population Value		56

Air Pathway Primary Sensitive Environments

Sensitive Environment Name	Reference	Value
None		
	Total Primary Sensitive Environments Value	

*** Note : Maximum of 7 Sensitive Environments Are Printed***

Air Pathway Secondary Sensitive Environments

Sensitive Environment Name	Distance	Reference	Value
1 BARTRAMINA BUGICANDA	0 - 1/4	13	1.2
	Total Secondary Sensitive Environments Value		1

SITE SCORE CALCULATION	SCORE
GROUND WATER PATHWAY SCORE:	58
SURFACE WATER PATHWAY SCORE:	12
SOIL EXPOSURE PATHWAY SCORE:	8
AIR PATHWAY SCORE:	9
SITE SCORE:	30

SUMMARY

1. Is there a high possibility of a threat to any nearby drinking water well(s) by migration of a hazardous substance in ground water? Yes

   If yes, identify the well(s).
   PEOPLE LIVING IN THE DREXEL GARDENS AND THE MARS HILL RESIDENTIAL AREAS OBTAIN DRINKING FROM PRIVATE WELLS.

   If yes, how many people are served by the threatened well(s)? 200

2. Is there a high possibility of a threat to any of the following by hazardous substance migration in surface water?
   A. Drinking water intake No
   B. Fishery No
   C. Sensitive environment (wetland, critical habitat, others) No

   If yes, identity the target(s).

3. Is there a high possibility of an area of surficial contamination within 200 feet of any residence, school, or daycare facility? No

   If yes, identify the properties and estimate the associated population(s)

4. Are there public health concerns at this site that are not addressed by PA scoring considerations? No

   If yes, explain:

REFERENCE LIST

1. ATEC ENVIRONMENTAL CONSULTANTS,SUBSURFACE INVESTIGATION AND SAMPLING RESULTS FOR ARVIN INDUSTRIES; ATEC PROJECT NUMBER 21-97509; 9-28-92

2. INDIANA GEOLOGICAL SURVEY, CAVES OF INDIANA, RICHARD L. POWELL, CIRCULAR NO. 8; 1961

3. INDIANA DEPARTMENT OF NATURAL RESOURCES/DIVISION OF WATER,DRILLER WELL LOGS

4. U.S.G.S. TOPOGRAPHIC MAP, MAYWOOD QUADRANGLE,1986; CLERMONT QUADRANGLE 1984; INDIANAPOLIS WEST QUADRANGLE, 1980; MAYWOOD QUADRANGLE,1986.

5. REFER TO ATTACHMENT A

6. U.S. DEPARTMENT OF COMMERCE, BUREAU OF THE CENSUS, 1990 CENSUS OF POPULATION AND HOUSING, SUMMARY POPULATION AND HOUSING CHARACTERISTICS OF INDIANA

7. TELEPHONE CONVERSATION WITH JIM HARRIS, INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT/DRINKING WATER BRANCH; 2-17-93

8. TELEPHONE CONVERSATION WITH MIKE LITTLEJOHN, SPEEDWAY WATER COMPANY; 2-10-93

9. SOIL SURVEY OF MARION COUNTY, U.S. DEPARTMENT OF AGRICULTURE; 1978

10. INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT/DRINKING WATER BRANCH ARNIE VIER; 2-10-93

11. U.S.G.S. TOPOGRAPHIC MAP,MAYWOOD QUADRANGLE; 1986

12. U.S.G.S. WATER RESOURCES DATA, INDIANA; WATER YEAR 1991; U.S. GEOLOGICAL SURVEY WATER DATA REPORT IN-91-1

13. INDIANA DEPARTMENT OF NATURAL RESOURCES/DIVISION OF NATURE PRESERVES-HERITAGE PROGRAM; MR. CLOYCE HEDGE, SENSITIVE ENVIRONMENT REQUEST

14. IINDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, ON-SITE VISIT WITH M. JAWORSKI, B. GILES, AND J. NADDY; 1-15-93

15. PERSONAL CONVERSATION WITH LLOYD PAXTON, MANAGER OF THE TRACTOR SUPPLY COMPANY WAREHOUSE, 1-15-93

16. REFER TO ATTACHMENT B